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Title: Annexin A2 as a biomarker for hepatocellular carcinoma in Egyptian patients

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1 What did this study explore?

This study explored the clinical utility of serum annexin A2 as a diagnostic marker for early hepatocellular carcinoma (HCC).

2 How did the authors perform all experiments?

Shaker MK, El Dorry AK, Abdel Fattah HI, and Sabbour GS designed the research; Shaker MK, El Dorry AK, Montasser IF, Abdelhakam SM, El Hadidy E, and Yousry R performed the full clinical assessment and analyzed the results of laboratory investigations; Shaker MK, and El Dorry AK performed and analyzed the radiological investigations including abdominal ultrasound and triphasic spiral abdominal CT; Abdel Fattah HI, Sabbour GS, El Hadidy E, and Yousry R contributed analytic tools; Shaker MK, El Dorry AK, Montasser IF and Abdelhakam SM analyzed the data.

3 How did the authors process all experimental data?

The authors analyzed data using IBM SPSS Statistics for Windows, Version 19.0 (IBM Corp., Armonk, NY, United States). The quantitative variables were presented as the mean and the standard deviation, while the qualitative variables were presented as frequencies and percentages. The values of skewed parameters were expressed as the median and IQR (25th–75th). An unpaired t test (t value) was used to compare a quantitative variable between two independent groups for parametric data, while a Mann-Whitney test (Z value) was used instead of the t test to compare a quantitative variable between two independent groups when the data were non parametric (SD > 25% of mean). A Chi square test (X2 value) was used to compare a qualitative variable between two independent groups. The Spearman correlation test (rho value) was used to rank different non parametric variables against each other, either positively or inversely. The statistical methods of this study were reviewed by Ahmed Mohamed Kamal, consultant in Biostatistics, Ain Shams University; Cairo, Egypt.

4 How did the authors deal with the pre-study hypothesis?

Hepatocellular carcinoma (HCC) is the fifth most common malignancy in the world. Approximately 30% of individuals with HCC present with normal levels of serum AFP, and therefore, this highlights the need for new biomarkers for HCC. Annexin A2 (ANXA2) is a 36-kDa calcium and phospholipid binding cytoskeletal protein of the Annexin superfamily that is localized to the extracellular surface of endothelial cells and various types of tumor cells. Many reports have shown that ANXA2 is differentially expressed between normal and malignant tissues and is potentially involved in tumor progression. Thus, measuring the serum level of ANXA2 may serve as a diagnostic marker of HCC.

5 What are the novel findings of this study?

The findings of this study show that the serum level of ANXA2 might be a good marker for HCC because it has a higher sensitivity, specificity, and positive and negative predictive values than AFP. ANXA2 may serve as a

marker for the early detection of HCC and for the differential diagnosis between HCC and chronic liver disease.

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